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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/982,488 | 10/17/2001 | Jeffrey Skolnick | 10886-045002 | 7996 |
| 20985 | 7590 | 04/28/2004 | EXAMINER | |
| FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081 | | | CLOW, LORI A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1631 | |

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/982,488 | SKOLNICK ET AL. | |
| | Examiner | Art Unit | |
| | Lori A. Clow, Ph.D. | 1631 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' arguments, filed 17 February 2004, have been fully considered. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claims 9-11 are currently pending.

Specification

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. See, for example, page 3 lines 26-29. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites, at step ii, "wherein said representations of side chains are converted to interaction centers..." It is unclear as to what element of the claims the limitation is intended to limit. Is it the code or is it actual method steps? If these are method steps, it is further unclear how side chains of amino acids are "converted" to interaction centers. Is this done by computer

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calculation of some aspect of the amino acid such that it may be represented as an interaction center? Clarification is requested.

Claim 9 further recites “which is projected onto an underlying cubic lattice”. It is unclear what is meant by “projected” in this limitation. Is the representation/model virtually projected onto a representative lattice? Clarification is requested.

Claim 9 recites “a knowledge based origin”. The definition of “knowledge based” is unclear and the specification is devoid of any explanation. Clarification is requested.

Claim 9 recites “comprising a force field”. Is this an actual force field or a virtual force field intended to be a model force field? It is unclear in that force field is generally associated with a physical embodiment. Clarification is requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 9-11 remain rejected under 35 U.S.C. 102(a) as being anticipated by Kolinski et al. (Proceedings of HRCL Workshop on Monte Carlo Approach to Biopolymers and Protein Folding.(1998) P. Grassberge et al., Eds., World Scientific, Singapore/London, pages 100-130:PTO-1449, reference AI), for the reasons set forth in the previous Office Action.

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Claims 9-11 remain rejected under 35 U.S.C. 102(a) as being anticipated by Kolinski et al. (J. Phys. Chem. (1998) Vol. 102, pp.4628-4637:PTO-1449, reference AJ), for the reasons set forth in the previous Office Action.

Response to Applicant's Arguments

Applicant argues that Kolinski, HRCL Workshop, does not produce an interaction center chain and project the interaction center chain onto an underlying cubic lattice. This is not persuasive and the Examiner would like to point Applicant specifically to page 114, section 4, explaining the side chain only representation of protein conformational space. Furthermore, Figure 2 illustrates precisely a conformation of a short chain connecting centers of mass of protein side groups which are projected onto a lattice.

Applicant argues that Kolinski, J. Phys. Chem., does not describe a computer-assisted method for determining a three-dimensional structure of a target amino acid sequence by aligning a target amino acid with a template etc. This is not persuasive because Applicant is arguing that the method includes alignment of a target amino acid with a template. However, such limitations are not present in the instant claims and Kolinski et al. still reads on the instant invention.

Furthermore, Applicant states that the Kolinski et al. model employs a single united atom representation of amino acid residues and that the model does not produce an interaction center chain and project the chain onto an underlying cubic lattice. This is not persuasive. Kolinski et al. state that the protein model representing the work is a lattice representation with good geometric fidelity. It uses single-interacting units per residue, not, as Applicant states, a single

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atom representation. Further the model includes a large number of lattice vectors representing bonds between the centers of mass of the protein side chains (see discussion, page 4636).

The rejection under 35 USC 102(a) over Oritz et al. has hereby been withdrawn.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Inquiries

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and

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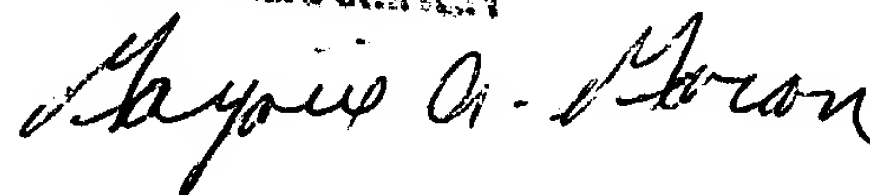
1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242, or (703) 308-4028.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lori A. Clow, Ph.D., whose telephone number is (571) 272-0715. The examiner can normally be reached on Monday-Friday from 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Woodward, Ph.D., can be reached on (571) 272-0722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Legal Instrument Examiner, Tina Plunkett, whose telephone number is (703) 305-3524, or to the Technical Center receptionist whose telephone number is (571) 272-0549.

MARJORIE MORAN
PATENT EXAMINER



April 23, 2004

Lori A. Clow, Ph.D.

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